

CLAIMS

I claim:

1. A metal detection system with a magnetometer head coupleable to conventional footwear, the system comprising:
 - a magnetometer assembly adapted for passing over a surface and detecting metal below the surface;
 - a control assembly operationally coupled to said magnetometer assembly, said control assembly facilitating operational control of said magnetometer assembly; and
 - a coupling means operationally coupling said magnetometer assembly to the conventional footwear.
2. The system of claim 1, further comprising a cable assembly having a first end coupled to said magnetometer assembly, said cable assembly having a second end coupled to said control assembly, said cable assembly routing signal communication between said magnetometer assembly and said control assembly.
3. The system of claim 1, further comprising:
 - a first transceiver operationally coupled to said magnetometer assembly for transmitting signal from said magnetometer assembly and receiving signals from said control assembly;
 - a second transceiver operationally coupled to said control assembly for transmitting signals from said control assembly and receiving signals from said magnetometer assembly.

4. The system of claim 1, wherein said control assembly further comprises a housing, said housing being coupleable to an article of clothing of a user facilitating hands-free operation.

5. The system of claim 1, wherein said coupling means further comprises a strap assembly adapted for being secured around a heel portion of the conventional footwear, said strap assembly having a first end positionable adjacent to a first side of the conventional footwear, said strap assembly having a second end positionable along a second side of the conventional footwear and over a top of the conventional footwear, said second end being selectively securable to said first end whereby said strap assembly is selectively secured to the conventional footwear.

6. The system of claim 5, wherein said strap assembly further comprises a first portion of hook and loop fastener operationally coupled to said first end of said strap assembly and a second portion of hook and loop fastener operationally coupled to said second end of said strap assembly, said first portion of hook and loop fastener being complementary to said second portion of hook and loop fastener.

7. The system of claim 1, further comprising:
said control assembly further comprises a housing, said housing being coupleable to an article of clothing of a user facilitating hands-free operation;

said coupling means further comprises a strap assembly adapted for being secured around a heel portion of the conventional footwear, said strap assembly having a first end positionable adjacent to a first side of the conventional footwear, said strap

assembly having a second end positionable along a second side of the conventional footwear and over a top of the conventional footwear, said second end being selectively securable to said first end whereby said strap assembly is selectively secured to the conventional footwear; and

said strap assembly further comprises a first portion of hook and loop fastener operationally coupled to said first end of said strap assembly and a second portion of hook and loop fastener operationally coupled to said second end of said strap assembly, said first portion of hook and loop fastener being complementary to said second portion of hook and loop fastener.

8. The system of claim 7, further comprising a cable assembly having a first end coupled to said magnetometer assembly, said cable assembly having a second end coupled to said control assembly, said cable assembly routing signal communication between said magnetometer assembly and said control assembly.

9. The system of claim 7, further comprising:

a first transceiver operationally coupled to said magnetometer assembly for transmitting signal from said magnetometer assembly and receiving signals from said control assembly;

a second transceiver operationally coupled to said control assembly for transmitting signals from said control assembly and receiving signals from said magnetometer assembly.

10. The system of claim 7, wherein said control assembly further comprises an aural alert generator, said aural alert generator emitting an aural alert when said magnetometer assembly detects metal, said aural alert generator facilitating signaling the user of a presence of metal below said magnetometer assembly.

11. The system of claim 1, wherein said control assembly further comprises an aural alert generator, said aural alert generator emitting an aural alert when said magnetometer assembly detects metal, said aural alert generator facilitating signaling the user of a presence of metal below said magnetometer assembly.

12. The system of claim 1, wherein said coupling means further comprises:

a strap assembly adapted for being secured around a heel portion of the conventional footwear, said strap assembly having a first end positionable adjacent to a first side of the conventional footwear, said strap assembly having a second end positionable along a second side of the conventional footwear and over a top of the conventional footwear, said second end being selectively securable to said first end whereby said strap assembly is selectively secured to the conventional footwear;

and an extension means operationally coupled between said strap assembly and said magnetometer assembly, said extension means facilitating placement of said magnetometer assembly away from a foot of a user.

13. The system of claim 12, wherein said extension means further comprises:

a horizontal extent with a first end operationally coupled to said strap assembly, said horizontal extent facilitating a lateral distance between the foot of the user and the magnetometer assembly; and

a vertical extent operationally coupled between a second end of said horizontal extent and said magnetometer assembly, said vertical extent facilitating a vertical placement of said magnetometer assembly above a surface.

14. The system of claim 12, wherein said extension means being adapted for positioning said magnetometer assembly in front of the user.

15. The system of claim 12, further comprising:

said control assembly further comprises a housing, said housing being coupleable to an article of clothing of a user facilitating hands-free operation;

said control assembly further comprises an aural alert generator, said aural alert generator emitting an aural alert when said magnetometer assembly detects metal, said aural alert generator facilitating signaling the user of a presence of metal below said magnetometer assembly;

said strap assembly further comprises a first portion of hook and loop fastener operationally coupled to said first end of said strap assembly and a second portion of hook and loop fastener operationally coupled to said second end of said strap assembly, said first portion of hook and loop fastener being complementary to said second portion of hook and loop fastener;

said extension means being adapted for positioning said magnetometer assembly in front of the user;

wherein said extension means further comprises:

- a horizontal extent with a first end operationally coupled to said strap assembly, said horizontal extent facilitating a lateral distance between the foot of the user and the magnetometer assembly; and
- a vertical extent operationally coupled between a second end of said horizontal extent and said magnetometer assembly, said vertical extent facilitating a vertical placement of said magnetometer assembly above a surface.

16. A method of detecting metal below a surface comprising:

- providing a magnetometer assembly adapted for passing over a surface and detecting metal below the surface;
- providing a control assembly operationally coupled to said magnetometer assembly, said control assembly facilitating operational control of said magnetometer assembly;
- providing a coupling means operationally coupling said magnetometer assembly to a conventional footwear;
- attaching said magnetometer assembly to the conventional footwear;
- actuating said magnetometer assembly via said control assembly; and
- walking along a desired path.

17. The method of claim 16, wherein said control assembly further comprises a housing, said housing being coupleable to an article of clothing of a user facilitating hands-free operation, said control assembly further comprises an aural alert generator, said aural alert generator emitting an aural alert when said magnetometer assembly detects metal, said aural alert generator facilitating signaling the user of a presence of metal below said magnetometer assembly.

18. The method of claim 17, further comprising:
providing a communications channel between said magnetometer assembly and said control assembly;
stopping upon detection of said aural alert;
digging below the surface starting at a position where said aural alert was detected.

19. The method of claim 16, wherein said step of providing a coupling means further comprises:

providing a strap assembly adapted for being secured around a heel portion of the conventional footwear, said strap assembly having a first end positionable adjacent to a first side of the conventional footwear, said strap assembly having a second end positionable along a second side of the conventional footwear and over a top of the conventional footwear, said second end being selectively securable to said first end whereby said strap assembly is selectively secured to the conventional footwear;

providing an extension means operationally coupled between said strap assembly and said magnetometer assembly, said extension means facilitating placement of said magnetometer assembly away from a foot of a user, said extension means having a horizontal

extent and a vertical extent, said horizontal extent including a first end operationally coupled to said strap assembly, said horizontal extent facilitating a lateral distance between the foot of the user and the magnetometer assembly, said a vertical extent operationally coupled between a second end of said horizontal extent and said magnetometer assembly, said vertical extent facilitating a vertical placement of said magnetometer assembly above a surface.

20. The method of claim 16, further comprising:

wherein said control assembly further comprises a housing, said housing being coupleable to an article of clothing of a user facilitating hands-free operation, said control assembly further comprises an aural alert generator, said aural alert generator emitting an aural alert when said magnetometer assembly detects metal, said aural alert generator facilitating signaling the user of a presence of metal below said magnetometer assembly;

providing a communications channel between said magnetometer assembly and said control assembly;

stopping upon detection of said aural alert; and

digging below the surface starting at a position where said aural alert was detected.